

Specifying at least one geographic service area within which satellite coverage is to be provided, said service area having a minimum elevation angle thereabove;

Defining a pair of inclined eccentric, geosynchronous satellite orbits, each satellite orbit defining the orbit, each satellite orbit defining an orbital plane having an inclination with respect to the equatorial plane of the Earth, each orbit having a subset of points with sky track over the service area, each sky track having an operating arc corresponding to the region for which each of said pair of satellites operates.

### REMARKS

Applicant wishes to thank the Examiner for considering the present application. In the Office Action mailed June 7, 2000, claims 1-18 are pending in the application. Claims 2, 3 and 12 have been canceled herein. Applicant respectfully requests the Examiner to reconsider the present application as amended above. Applicant has added no new matter to the application by these amendments. Claims 1-18 stand rejected under 35 U.S.C. §103(a) as being unpatentable over *Turner* (5,326,054). Applicant believes the amendments overcome this rejection.

The present invention has advantages not realized, taught or suggested in the prior art. The present invention provides inclined eccentric geosynchronous orbits for a satellite system that advantageously enables a consistently high elevation angle from a service area. Further, due to the relatively higher altitudes less stationkeeping is required than the *Turner* and *Castiel* references. Claims 8 and 17 specifically recite the coordination of at least two coordinated satellite orbits that are each inclined eccentric and geosynchronous. The angle of inclination of the first orbit and the second orbit relative to an equatorial plane is different to allow satellite coverage to be continuous for a service area.

The *Turner* reference provides a system of satellites that have ACE orbits. The ACE orbits are elliptical orbits and admittedly *Turner* teaches the potential

of inclining the elliptical orbit. However, *Turner* teaches that preferably the orbits are not inclined. As recited in Col. 3, line 34 of the *Turner* reference, "the present invention is any manmade satellite (1) that travels in a certain elliptical orbit. The satellite (1) revolves about the earth five or six times per day. Each of the five or six apogees corresponding to the five or six daily revolutions is positioned above the same longitude of the earth at substantially the same local time-of-day for each day of the year." The *Turner* reference does not teach or suggest the use of geosynchronous orbits that are inclined and eccentric. The *Turner* reference uses satellites that revolve about the earth" five or six times" a day. Geosynchronous revolve once per day.

Claims 1-18 stand rejected under 35 U.S.C. §103(a) as being unpatentable over *Castiel* (5,845,206). Applicant respectfully requests consideration of this rejection.

The *Castiel* reference as the Examiner points out, discloses an elliptical satellite system which emulates the characteristics of geosynchronous satellites. However, the *Castiel* reference does not provide geosynchronous satellites. As described in several locations in the *Castiel* reference, the satellites employed have less than a geosynchronous period. For example, in Col. 14, line 18-20, 6-hour orbits are described. Other examples of orbits are provided such as in Col. 6, line 54-59. Thus, it is clear that *Castiel* does not contemplate the use of geosynchronous inclined eccentric orbits.

Thus, the *Castiel* and the *Turner* references both teach away from providing a geosynchronous orbit satellite system by providing systems that use relatively low earth orbits and therefore are not geosynchronous. The claims above have been amended to reflect these limitations.

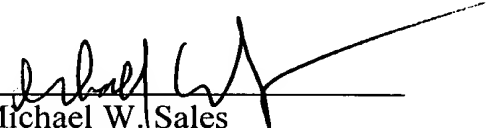
With respect to the dependent claims, namely claims 4-7, 9-16, and 18, each of these claims contains the limitations of their independent claims and are believed to be allowable for the same reasons set forth above.

In light of the above amendments and remarks, applicant submits that all objections and rejections are now overcome. The application is now believed in condition for allowance and expeditious notice thereof is earnestly solicited. Should

the Examiner have any questions or comments which would place the application in better condition for allowance, he is respectfully requested to call the undersigned attorney.

Respectfully submitted,

Dated: August 15, 2000

  
Michael W. Sales  
Attorney for Assignee  
Reg. No. 30,213

Hughes Electronics Corporation  
ES/001/A109  
P.O. Box 956  
El Segundo, CA 90245-0956  
(310) 662-9916

**I hereby certify that this correspondence is being deposited with the United States Postal Service as first-class mail in an envelope addressed to the Assistant Commissioner of Patents, Washington, DC 20231 on August 15, 2000**

  
Michael W. Sales, Registration No. 30,213